Listing Of The Claims

1. (original) A method for heating a catalyst bed for start-up, comprising: providing a catalyst bed having an upstream face and a downstream face; providing an electrical heating element positioned along one face of the catalyst bed; passing a small flow of reactants through the electrical heating element and catalyst bed; and heating the electrical heating element to initiate an exothermic reaction at the face of the catalyst bed, wherein the heat of reaction propagates throughout the catalyst bed thereby heating the catalyst bed for start-up.

2. (original) The method of claim 1, wherein the electrical heating element is positioned along the upstream face of the catalyst bed.

3. (original) The method of claim 1, wherein the electrical heating element is formed in a spiral design along one face of the catalyst bed.

4. (original) The method of claim 1, wherein the catalyst bed is selected from the group consisting of pellets, extrudates, spheres, monoliths, and any combinations thereof.

5. (original) The method of claim 1, wherein the catalyst bed contains catalyst selected from the group consisting of autothermal reforming catalysts, partial oxidation catalysts, steam reforming catalysts, water gas shift catalysts, preferential oxidation catalysts, anode tailgas oxidation catalysts, and sulfur absorbents.

6. (canceled)

7. (canceled)

8. (canceled)

9. (canceled)

10. (canceled)

11. (canceled)

12. (canceled)

13. (original) A method for heating a catalyst bed, comprising: providing an electrical heating element positioned within a cooling coil located substantially within the catalyst bed; and heating the electrical heating element thereby heating the catalyst bed to a desired temperature.

14. (original) The method of claim 13, wherein the desired temperature is the start-up temperature.

15. (original) The method of claim 13, wherein the desired temperature is the desired reaction temperature during transient operation.

16. (previously amended) A method for heating a catalyst bed to a desired temperature, comprising: providing a catalyst bed in communication with an electrical heating element wherein the electrical heating element is a face heater; and heating the electrical heating element so as to maintain the desired temperature of the catalyst bed.

17. (original) The method of claim 16, wherein the desired temperature is the start-up temperature.

18. (original) The method of claim 16, wherein the desired temperature is the desired reaction temperature during transient operation.

19. (original) The method of claim 16, wherein the electrical heating element is weaved through the catalyst bed.

20. (original) The method of claim 16, wherein the catalyst bed is a monolith.

21. (original) The method of claim 18, wherein the electrical heating element is wrapped around the monolith.

22. (previously amended) A method for heating a catalyst bed to a desired temperature, comprising: positioning an electrical heating element upstream of the catalyst bed wherein the electrical heating element is a face heater; and passing a fluid across the electrical heating element and through the catalyst bed, wherein the catalyst bed is heated to the desired temperature.

23. (original) The method of claim 22, wherein the desired temperature is the start-up temperature.

24. (original) The method of claim 22, wherein the desired temperature is the desired reaction temperature during transient operation.